

**REMARKS**

This correspondence is filed in response to the Office Action mailed July 17, 2006.

The Examiner continues to reject Claims 55, 57-59, 88 and 89 under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over *Kain, Jr. et al.* (6,180,206). Applicants amend Claims 55, 88 and 89 to further clarify in the claims Applicants' inventive stiffness-treated prepreg ply.

Applicants respectfully urge that *Kain, Jr.* does not anticipate or motivate Applicants' claimed invention and request withdrawal of the Examiner's rejection placing the application in order for allowance.

**Rejection Under 35 U.S.C. § 102(e) and 103(a)**

The Examiner rejects Claims 55, 57-59, 88 and 89 under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over *Kain, Jr. et al.* (6,180,206).

The Examiner asserts that the properties of Applicants' invention are inherent in *Kain, Jr.* In particular, the Examiner states that it is generally known in the art that "prepreg plies are produced by partially curing the polymer coating, i.e., treating the fabric, to reach a stage-B condition." The Examiner provides no source for this general statement, but Applicants believe this is a general reference to the art. Therefore, the type of prepreg fabric to which the Examiner refers would be considered an untreated fabric as defined by Applicants' application and as used by *Kain, Jr.* The Examiner then references that the *Kain, Jr.* "prepreg meets all the claimed structural limitations of the stiffness treated fabric." However, Applicants claim is to a treated fabric "where the stiffness-treated fabric exhibits an ASTM stiffness value not less than 7% greater than the ASTM stiffness value of an untreated fabric." In other words, a stiffness-treated fabric will exhibit at least 7% greater stiffness than a standard prepreg such as in *Kain, Jr.* Accordingly, empirical data is not required to overcome *Kain, Jr.*, the claim is a direct increase of 7%. A stiffness-treated prepreg according to the present application is thus defined as being treated, as defined by Applicants, such that the prepreg exhibits at least 7% greater stiffness than a prepreg not treated according to Applicants process.

Therefore, Applicants assert that the stiffness value of Applicants' invention is not inherent in *Kain, Jr.* and the rejection should be withdrawn. The *Kain, Jr.* prepeg is untreated, whereas Applicants prepeg fabric is treated.

Next, the Examiner asserts that "the adhesive layer, which is a resin system, and the prepeg ply meet the structural limitations of the stiffness treated fabric recited in the claims." However, *Kain, Jr.* appears to eliminate the need for an adhesive layer as revealed in Table 1, Figure 10 and related discussion. Therefore, it is unclear where the Examiner is finding the adhesive layer in *Kain, Jr.* It is only the prior art to *Kain, Jr.* that relies upon an adhesive layer. Nonetheless, the adhesive layer disclosed in *Kain, Jr.* cited art is only adjacent the core and not between prepeg plies where the frictional resistance is increased by Applicants' claimed invention. Moreover, for the Examiner to state that "an adhesive layer adjacent the fabric layer can be combined together to teach the stiffness treated prepeg ply" appears to be an improper use of hindsight to argue the obviousness of Applicants' claimed invention.

Applicants amend Claims 55, 88 and 89 to clarify that the stiffness-treatment is the separate defined treatment prior to impregnating the fibers with resin. This is disclosed for example in Example 1. The invention clearly distinguishes itself from an untreated fabric as used in *Kain, Jr.*, which means a fabric "and, optionally, precursors of polymeric material, wherein both the fabric and the fabric raw materials have not been treated under conditions which advance polymerization and/or derivative formation of precursors of polymeric materials." Page 20, lines 17-21. Indeed, the *Kain, Jr.* prepeg plies represent untreated prepgs as defined by Applicants. As such, *Kain Jr.* clearly does not disclose or motivate an untreated fiber that is treated prior to application of the composite resin as claimed by Applicants.

Applicants amend Claims 55, 88 and 89 to clarify the claimed invention as comprising a unique stiffness-treated prepeg prepared prior to contact with the honeycomb core, and not merely a lay-up involving an adhesive next to a fiber material. Applicants disclosed this for example in Example 3. Applicants' invention is not the serendipitous result of a lay up involving an adhesive layer adjacent the fabric layer. A ""prepeg ply" means a resin-impregnated fabric." Page 34, lines 5-6. This amendment further clarifies the distinction between the Examiner's asserted

serendipitous result of a lay-up involving an "adhesive layer adjacent the fabric layer" and Applicants stiffness-treated prepreg ply.

Applicants amend Claim 55 to claim a honeycomb sandwich structure precursor consisting of a honeycomb core and utilizing only the inventive structural stiffness-treated prepreg plies necessary for the finished composite, without need for untreated prepeg plies, adhesives or films as disclosed in *Kain Jr.* Support for this amendment is found for example in Figure 3.

While the Examiner urges that slippage between plies may also be reduced by the *Kain, Jr.* invention and therefore, Applicants' method of increasing friction between plies is obvious and inherent in *Kain Jr.*, Applicants' claim is to improved fiber tow having treated fibers that will increase the frictional resistance over systems such as *Kain Jr.* by at least 7%. Moreover, there is no support in *Kain, Jr.* for the Examiner's assertion. Indeed, *Kain, Jr.* teaches that at least an extended Ply 6 is required to overcome slippage. Therefore, Applicants' method of preventing slippage between plies is not obvious.

As such, Applicants respectfully request the Examiner withdraw the rejections and allow the application.

It is respectfully submitted that the prepreg of a honeycomb sandwich structure precursor of the present invention as claimed by Applicants is patentable and not anticipated or motivated by *Kain, Jr.* It is submitted that Claims 55, 57-59, 88 and 89 define a patentable invention and prompt allowance is sought. Please direct any questions to the undersigned attorney at (714) 666-4396.

The Commissioner is hereby authorized to charge any additional fees associated with this paper or during the pendency of this application, or credit any overpayment, to Deposit Account No. 03-4083.

Respectfully submitted,



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